Project Introduction

The proposed innovation is a static, cathode-fed, 2000 psi, balanced-pressure Advanced Cathode Electrolyzer (ACE) based on PEM electrolysis technology. It electrolyzes water vapor supplied to the hydrogen-evolving electrode and eliminates the need to circulate hydrogen and water on the cathode side of the cell. Innovations include the application of Infinity proprietary cell sealing technology to electrolysis to minimize high-pressure seals and the use of innovative passive current-control techniques to eliminate potential hydrogen gas in feedwater chambers. ACE produces hydrogen and oxygen that is free of liquid water droplets without using dynamic product gas/liquid water phase separation and/or other motorized equipment.

Primary U.S. Work Locations and Key Partners

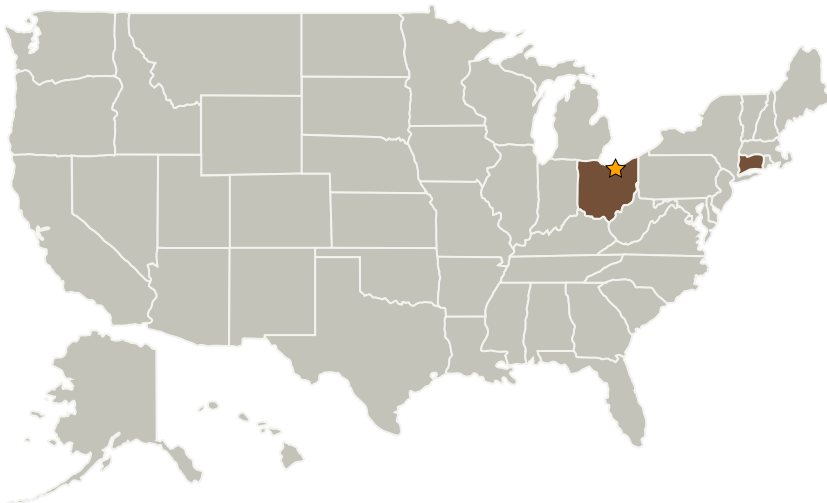| Organizations Performing Work	Role	Type	Location
⭐Glenn Research Center(GRC)	Lead Organization	NASA Center	Cleveland, Ohio
Infinity Fuel Cell and Hydrogen, Inc.	Supporting Organization	Industry	Windsor, Connecticut

Advanced Cathode Electrolyzer (ACE), Phase I

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Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Center / Facility:

Glenn Research Center (GRC)

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

Primary U.S. Work Locations	
Connecticut	Ohio

Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Technology Areas

Primary:

- TX07 Exploration Destination Systems
  └ TX07.1 In-Situ Resource Utilization
    └ TX07.1.3 Resource Processing for Production of Mission Consumables

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